

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN**

General Electric Company,

Plaintiff-Counter-Defendant,

Case No. 08-cv-298-bbc

v.

SonoSite, Inc.,

Defendant-Counter-Plaintiff.

**PLAINTIFF GENERAL ELECTRIC COMPANY'S REPLY BRIEF REGARDING
CONSTRUCTION OF CLAIM TERMS OF U.S. PATENT NO. 5,722,412**

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Pursuant to the Court's June 12, 2008 Preliminary Pretrial Conference Order regarding claim construction and its September 26, 2008 Order amending the briefing schedule, General Electric Company ("GE") hereby respectfully submits this reply brief regarding construction of claim terms of U.S. Patent No. 5,722,412 ("the '412 patent").

I. INTRODUCTION

The parties have presented two issues for the Court to resolve.

The first is whether the phrases in claims 11 and 16, which describe the beamformer used in the ultrasound system, should be construed in accordance with the ordinary meaning of the terms used in those phrases, as GE suggests, or should be construed as having an additional limitation defining the beamformer output, as SonoSite, Inc. ("SonoSite") suggests. SonoSite attempts to dress up its effort to improperly add this output limitation to the claims as merely providing a definition for the phrase "sampled data beamformer." As shown below, SonoSite's added output limitation is inconsistent with the art-recognized operation of sampled data beamformers and is unsupported by the claim language, the patent or its file history.

The second issue is whether claim 11 is sufficiently definite to provide those skilled in the art with fair notice of what it covers – more specifically, with notice of what must weigh less than ten pounds. Neither SonoSite nor its expert has directed the Court to anything in the patent that gives guidance as to which of the many possible combinations of components in an ultrasound system must weigh less than ten pounds. Indeed, as pointed out below, even SonoSite's proposed construction remains ambiguous. There is no alternative but to declare claim 11 insolubly ambiguous and, accordingly, invalid.

II. SONOSITE’S CONSTRUCTION OF THE SAMPLED DATA BEAMFORMER PHRASE IN CLAIM 11 ALTERS THE ORDINARY MEANING OF THE CLAIM TERMS AND IMPROPERLY IMPORTS A LIMITATION FROM THE SPECIFICATION

As stated in the opening briefs, SonoSite and GE disagree as to the construction of the following phrase in claim 11:

“a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer”.

The essence of the dispute is whether this phrase must be given its plain meaning, which merely requires that the sampled data beamformer delay and combine sampled data, as recited in the claim, or whether the phrase must be amended by adding a further limitation to claim 11 requiring that the sampled data beamformer also output only a digital signal, as SonoSite contends.

To support adding this limitation, SonoSite contends

- (1) that the words “sampled data beamformer” have no generally accepted meaning in the art – even though SonoSite’s own expert admits that both “sampled data” and “beamformer” are familiar terms and even agrees with GE’s definitions of those separate terms and even though SonoSite itself agreed with GE’s construction of the claim 11 phrase in a recent litigation concerning the ‘412 patent;
- (2) that the phrase must be limited to a sampled data beamformer that outputs only a digital signal because the ‘412 patent describes beamformer embodiments that output a digital signal, even though controlling precedent unequivocally prohibits importing limitations from the patent specification into the claims; and
- (3) that an argument during prosecution that the prior art disclosed a conventional analog beamformer requires that the phrase be interpreted to exclude not only a conventional analog beamformer, but also to exclude some sampled data beamformers.

SonoSite’s construction is wrong as a matter of fact and law.

A. SonoSite's Expert Agrees with GE's Ordinary Meaning of the Words in the Sampled Data Beamformer Phrase

SonoSite's expert, Dr. Thomas Szabo, acknowledges that both "sampled data" and "beamformer" are familiar terms to one skilled in the art. Szabo Decl. ¶¶ 13-15 and ¶ 21.¹ As explained by Dr. Szabo, the essence of beamforming is "delaying and combining echo signals received," *id.* ¶ 15, and a beamformer is "one or more components of an ultrasound system that focus echo signals received by delaying and combining them." *Id.* ¶ 22. GE's proposed construction of the claim 11 phrase is consistent with Dr. Szabo's definition of beamformer:

"one or more components of an ultrasound system that delay and combine signals received by elements of said array transducer."

Dr. Szabo also agrees with GE's construction of "sampled data" in the claim 11 phrase. According to Dr. Szabo, "sampled data" means "analog or digital values representing ultrasound echo signals at discrete time intervals." *Id.* ¶ 21. Or, as alternatively stated by both parties in their proposed claim constructions, "analog and/or digital samples of echo signals."

When one simply combines Dr. Szabo's definitions of "sampled data" and "beamformer," the construction of the phrase in claim 11 is the one proposed by GE:

"one or more components of an ultrasound system that delay and combine analog and/or digital samples of echo signals received by elements of said array transducer."

Because GE's proposed construction reflects the ordinary meaning of the words in the claim, it is the correct construction.

¹ Declaration of Prof. Thomas L. Szabo in Support of SonoSite's Opening Claim Construction Brief [DKT 58] ("Szabo Decl.").

B. “Sampled Data Beamformer” Is an Art-Recognized Term

Despite the plain – and agreed – meanings for the terms “sampled data” and “beamformer,” SonoSite argues that the phrase “sampled data beamformer” should be construed not merely as a combination of these understood meanings, but should additionally be construed to be a beamformer, the output of which is only a digital signal.

To support that position, SonoSite and its expert first baldly argue that the phrase “sampled data beamformer” has no generally accepted meaning in the art. SonoSite Br. at 12²; Szabo Decl. ¶ 20. SonoSite and Dr. Szabo are wrong.

As shown in literature references dating back at least to the 1970s, “sampled data beamformer” has been used in the art and has uniformly been understood to refer to a beamformer that delays and combines analog and/or digital samples of echo signals. *See* Schafer Decl. II ¶¶ 4-10 and Exs. A to E.³ Even Lauren Pflugrath, an inventor of the ‘412 patent, uses the phrase “sampled data beamformer” in the manner proposed by GE. *See id.* ¶ 11, Exs. F and G. As stated by Mr. Pflugrath:

The preferred beamformer is a sampled data beamformer which may use either sampled analog or digital technology.

Id., Ex. F., col. 4:1-3.

Plainly, “sampled data beamformer” is an art-recognized term, and GE’s proposed construction of the beamformer phrase in claim 11 that adopts that art-recognized meaning is the correct one.

² Defendant-Counter-Plaintiff SonoSite, Inc.’s Motion for Construction of Claims and Opening Brief in Support of Motion [DKT 56] (“SonoSite Br.”).

³ Second Declaration of Mark Schafer, Ph.D. in Support of Plaintiff-Counter-Defendant’s Motion for Construction of Claim Terms of U.S. Patent No. 5,722,412 (“Schafer Decl. II”).

C. The Art-Recognized Meaning of “Sampled Data Beamformer” Does Not Limit the Output to Digital Signals

A beamformer is defined in the art by what the beamformer delays and combines; it is not defined by reference to its output. Schafer Decl. II ¶¶ 15, 21. Accordingly, a “sampled data” beamformer is one that delays and combines “sampled data” (that is, samples of analog or digital signals). *Id.* It is not customary to define a beamformer by reference to what it outputs. *Id.* The language of claim 11 itself is consistent with this art-recognized practice, as the claim refers only to the input to the beamformer and makes no reference to its output.

In keeping with customary practice, Mr. Pflugrath, a ‘412 patent inventor, has used the phrase “sampled data beamformer” to mean a beamformer that delays and combines sampled data. *Id.*, Ex. F, col. 4:1-3. Likewise, when Mr. Pflugrath referred to an “analog sampled data beamformer,” the phrase “analog sampled data” referred only to the data being delayed and combined, not to the output from the beamformer to the ultrasound system. Indeed, the output to the ultrasound system from Mr. Pflugrath’s “analog sampled data beamformer” could be either analog or digital.

The summed output signals may be digitized by an analog to digital converter in the probe and transmitted to the ultrasound system 30 in digital form, or the analog signals may be transmitted to the ultrasound system 30 and converted into digital echo samples in the ultrasound system.

Id., Ex. F, col. 4:31-36. *See also id.* ¶ 21. Plainly, the ‘412 patent inventors do not use the term “sampled data beamformer” to mean only those sampled data beamformers that output digital signals.

Dr. Szabo concedes that the “essence” of beamforming is delaying and combining signals. Szabo Decl. ¶ 15. Over and over he emphasizes that beamforming refers to these functions of delaying and combining. *Id.* ¶¶ 13-15, 22. In his descriptions of beamforming, he

never discusses the output of the beamformer. Likewise, SonoSite, in its brief, describes beamforming without reference to its output. SonoSite Br. at 7 (“Receive beamforming is the process of delaying and combining signals resulting from received echoes for purposes of focusing those signals.”); *id* at 12 (a beamformer “is one or more components of an ultrasound system that delay and combine received echo signals”).

Indeed, until SonoSite was confronted with the prospect of invalidation in this litigation, SonoSite and Dr. Szabo agreed with GE’s construction of the beamformer limitation in claim 11. Specifically, in a prior litigation involving the ‘412 patent, *SonoSite, Inc. v. Zonare Medical Systems, Inc.*, Civ. Action No. 8:07-CV-00222-AG-FFM (C.D. Cal.) (“Zonare Litigation”), SonoSite expressly argued that its proposed construction, which made no mention of the output of the beamformer, was “consistent with ... the plain and ordinary meaning ascribed to the word ‘beamformer’ by those of ordinary skill in the art of diagnostic medical ultrasound” and “faithful to the claim language.” McAlhany Decl., Ex. 4 at 12, 13, 18.⁴

Plainly, it is *not* customary for a beamformer to be defined by reference to its output, but rather only by reference to the nature of the data being delayed and combined. Accordingly, GE’s proposed construction, which does not add a reference to the output from the beamformer, is the correct one.

D. There is No Basis in the Intrinsic Evidence for Importing an Output Limitation into Claim 11

To support altering the art-recognized understanding of a sampled data beamformer, SonoSite cites portions of the ‘412 patent disclosing embodiments in which the beamformer

⁴ Declaration of Robert McAlhany, Jr. in Support of Plaintiff-Counter-Defendant’s Motion for Construction of Claim Terms of U.S. Patent No. 5,722,412 [DKT 54] (“McAlhany Decl.”).

outputs digital signals. SonoSite Br. at 13. However, conspicuously absent from SonoSite's discussion of claim construction principles is the Federal Circuit's warning that, though claim terms must be read in light of the specification, claims should not be confined to embodiments described in the specification, even where the specification describes every specific embodiment of the invention or describes only a single embodiment. *Compare* SonoSite Br. at 5, 12 with *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005); *see also Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 391 F.3d 1111, 1117 (Fed. Cir. 2004). Consistent with *Phillips*, it is improper for SonoSite to import limitations of specific embodiments into claim 11 in order to alter the art-recognized understanding of "sampled data beamformer."⁵

Nor do SonoSite's cited portions of the '412 patent file history support any special meaning for the term "sampled data beamformer." As originally drafted, claim 11 included the term "beamformer," not "sampled data beamformer":

A handheld ultrasound system comprising:
 an array transducer; and
 a beamformer for delaying and combining echo signals received by
 elements of said array transducer,
 wherein said array transducer and said beamformer are located in
 one or more enclosures weighing less than ten pounds (4.5
 kilograms).

McAlhany Decl., Ex. 3 (Jun. 28, 1997 Response to Office Action) at 7 (Note that original claim 4 in the '412 patent application became claim 11 in the '412 patent.). This original language generically covered any beamformer and did not limit the input or output. Rather, the input could be analog, sampled analog or sampled digital data. *See* Schafer Decl. II ¶ 17.

⁵ Of course, if it were proper to limit the claim to the specific beamformer described in the specification, SonoSite would be required to import all of the beamformer limitations, not merely the selected ones that it finds convenient to import.

SonoSite amended the claim language as follows:

A handheld ultrasound system comprising:
an array transducer; and
a sampld data beamformer for delaying and combining samples of
echo signals received by elements of said array transducer,
wherein said array transducer and said beamformer are located in
one or more enclosures weighing less than ten pounds (4.5
kilograms).

Id. ¶ 18. (The underlined language indicates the language added to the original claim.). The addition of the phrases “sampled data” and “samples of” narrowed the claim to beamformers that receive only “samples of” the echo signals from the transducer and to beamformers that delay and sum only “sampled data.” Like the original claim, the amended claim does not refer to the output of the beamformer, and accordingly the amendment did not change or in any way limit what the beamformer may output. *Id.*

Similarly, the arguments made in connection with these amendments merely distinguished a sampled data beamformer from a “conventional analog beamformer”; it did not narrow the class of “sampled data beamformers” included in the claim. *Id.* ¶ 19. Specifically, the arguments over the conventional analog beamformers were as follows:

The Chiang et al patent is directed to a scan head which includes a beamformer producing an analog electrical signal and an interface. As such, it is directed to a different invention than that of the present application, which claims an array transducer with a sampld data beamformer, which in a preferred embodiment is a digital beamformer.

* * *

The Shinomura et al. device is unclear as to the nature of its beamformer but it appears, like Chiang et al., to be a conventional analog beamformer because the signals produced by the device must be A/D converted prior to being recorded or stored in the memory card 4A. This is specified in the paragraph spanning columns 7-8 of the patent, in the paragraph beginning at column 8, line 36, and in the two consecutive paragraphs beginning at column 10, line 32. Consequently there is no suggestion of a sampled data beamformer as recited in amended Claims 1 and 4.

McAlhany Decl., Ex. 3 (Jun. 28, 1997 Response to Office Action) at 9-10 (emphasis added).

As Dr. Schafer has explained, a conventional analog beamformer delays and combines an analog signal, which is a continuous signal, in contrast to sampled data beamformers in which samples of signals are delayed and summed.⁶ Schafer Decl. II ¶ 19. According to the foregoing arguments, amending the claim to refer to a “sampled data beamformer” that delayed and combined “samples” of signals was intended to exclude from the claim only conventional analog beamformers (which output continuous signals – that is, analog signals) – not to exclude certain kinds of sampled data beamformers, as SonoSite now contends. *Id.*

Again, the file history confirms that GE’s proposed construction, which does not improperly define a beamformer by reference to its output or improperly import a limitation from the specification, is the correct construction.

E. The Law Requires That GE’s Proposed Construction Be Adopted

“It is elementary that claim construction begins with, and remains focused on, the language of the claims.” *Biagro W. Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1302 (Fed. Cir. 2007) (citing *Innova/Pure Water*, 381 F.3d at 1116); *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998) (“The appropriate starting point for claim construction ‘is always with the language of the asserted claim itself.’”). Claim terms should be given their ordinary and customary meaning to a person of ordinary skill in the art. *Phillips*, 415 F.3d at 1313; *see also CollegeNet v. Apply Yourself, Inc.*, 418 F.3d 1225, 1231 (Fed. Cir. 2005);

⁶ As discussed above, even the ‘412 patent inventor, Mr. Pflugrath, uses the term “sampled data beamformer” to mean beamformers that delay and sum sampled signals that are either analog or digital and does not limit the term to sampled data beamformers that output only digital signals. *See* discussion in Section II(B), *supra*; *see also* Schafer Decl. II, Ex. F, col. 3:66 - 4:49.

Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). SonoSite’s effort to persuade this Court to adopt a meaning for “sampled data beamformer” that is at odds with the art-recognized meaning violates the claim construction principle that, where the claim language is clear, the court must accord it full breadth – even if the result is a claim that is clearly invalid. *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1372 (Fed. Cir. 2002); *see also id.* at 1370 (the court must presume that the terms in the claim mean what they say and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning).

The strong presumption in favor of the ordinary meaning of a claim term is overcome only where “the patentee has ... clearly and explicitly defin[ed] the claim term.” *Id.* at 1370. That is not the case here. Nothing in the written description or prosecution history of the ‘412 patent clearly and explicitly defines “sampled data beamformer” in any special way. Indeed, the ‘412 patent specification never even uses the term “sampled data beamformer” and certainly never “clearly and explicitly” defines it to mean only sampled data beamformers that output digital signals.

Furthermore, it would be improper for this Court to limit the meaning of this term based on preferred embodiments described in the patent specification, as SonoSite advocates. *See Phillips*, 415 F.3d at 1323; *Comark*, 156 F.3d at 1186-87 (refusing to import limitations into the claim to limit “video delay circuit” where it had a meaning to those skilled in the art and the written description of the preferred embodiment detailed how to use the video delay circuit but did not shed light on the term’s meaning to the inventor or its common meaning to skilled persons). This would be improper even if the patent described only a single embodiment because “claims will not be ‘read restrictively unless the patentee has demonstrated a *clear*

intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Innova/Pure Water*, 391 F.3d at 1117 (citation omitted) (emphasis added).

A claim term may be interpreted narrowly in light of a “clear and unmistakable disavowal of scope during prosecution.” *Purdue Pharma L.P. v. Endo Pharms., Inc.*, 438 F.3d 1123, 1136 (Fed Cir. 2006). However, that rule has *no* application “where the alleged disavowal of claim scope is ambiguous.” *Omega Eng’g, Inc. v. Faytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003). *See also N. Telecom Ltd. v. Samsung Elecs. Co., Ltd.*, 215 F.3d 1281, 1294-95 (Fed. Cir. 2000) (disclaimer will not be found where statements during prosecution are susceptible of different interpretations).

That rule clearly has no application to the ‘412 patent prosecution as there was no clear disavowal of any type of “sampled data beamformer.” The only beamformers clearly disavowed were “conventional analog beamformers,” which are beamformers that delay and combine and then output continuous signals (*i.e.* analog signals), not sampled data signals. *Innova*, 391 F.3d at 1120 (unless there is a “clear and unmistakable disavowal of claim scope,” the term must be given the full breadth of its meaning).

Accordingly, GE requests that the Court adopt GE’s construction of “sampled data beamformer,” which gives full effect to its art-recognized meaning.

III. SONOSITE’S CONSTRUCTION OF THE DIGITAL BEAMFORMER PHRASE IN CLAIM 16 IMPROPERLY ALTERS THE ORDINARY MEANING OF THE PHRASE

The parties’ disagreement with respect to claim 16 is the same as that above with respect to claim 11: should the beamformer – in the case of claim 16, a digital beamformer – be defined by reference to its output. In essence, SonoSite argues that the claim 16 “digital beamformer” must output only digital signals because the “sampled data beamformer” in claim 11 outputs only

digital signals. SonoSite Br. at 22. Because SonoSite is wrong with respect to claim 11, it is equally wrong with respect to claim 16.

Like any beamformer, a “digital beamformer” is one that is defined by reference to the signals that it delays and combines. Schafer Decl. II ¶¶ 21, 22. It is not proper to further define it by reference to its output. *Id.*; see also discussion in Section II, *supra*.

GE requests that the Court reject SonoSite’s effort to import a limitation into claim 16 and that the Court adopt GE’s proposed construction.

IV. SONOSITE’S EFFORT TO REFUTE THE FATAL INDEFINITENESS OF CLAIM 11 MERELY CONFIRMS THAT THE CLAIM IS HOPELESSLY AMBIGUOUS

A. There Is No Dispute That the Weight Limitation in Claim 11 Is Ambiguous

An ultrasound system may have a number of components, including a display, a transducer, a beamformer, user controls or a keyboard, image processors, cords and other components. As explained in the ‘412 patent, components of an ultrasound system can be in a single integrated unit or can be in a number of separate units. See McAlhany Decl., Ex. 2, Figs. 1-4, col. 4:39-49. By the time the ‘412 patent was filed, ultrasound systems having different configurations were known. There were a number that were very small and weighed only a few pounds in their entirety; others had separate components, some components of which were quite small and others of which weighed up to several hundred pounds. See, e.g., Supp. McAlhany Decl., Ex. 6,⁷ depicting entire systems weighing less than ten pounds, such as the Minivisor from 1979, and multi-component systems in which some components weigh only a few pounds, while

⁷ Supplemental Declaration of Robert E. McAlhany, Jr. in Support of Plaintiff-Counter-Defendant’s Motion for Construction of Claim Terms of U.S. Patent No. 5,722,412 (“Supp. McAlhany Decl.”).

others weigh as much as several hundred pounds. *See also* Supp. McAlhany Decl., Exs. 7, 8; SonoSite Br. at 2.

As discussed in GE's opening claim construction brief, the language of claim 11 of the '412 patent is ambiguous because it is unclear what components referred to in claim 11 must weigh less than ten pounds – the enclosures themselves, the enclosures with only the transducer and beamformer electronics, the transducer and beamformer enclosures with all their contents, the enclosures collectively, each enclosure separately, etc. GE Br.⁸ at 18-19.

The parties agree that a claim can survive an indefiniteness challenge only if “the meaning of the claim is discernible.” *Compare* SonoSite Br. at 16 *with* GE Br. at 20-21. As an inventor must give notice of the bounds of his invention, a claim that is “insolubly ambiguous” must be found invalid for indefiniteness. *See* cases discussed in GE Br. at 20-21, 22.

SonoSite does not contend that claim 11 lacks ambiguity. In addition, SonoSite concedes that the file history for the '412 patent provides no guidance as to how to interpret the language of claim 11. SonoSite Br. at 20 (“The prosecution history ... does not address the disputed claim term regarding weight.”). Accordingly, claim 11 can be salvaged only if the specification of the '412 patent clarifies which of the many alternative constructions is the correct one.⁹

⁸ Brief In Support of Plaintiff's Motion for Construction of Claim Terms of U.S. Patent No. 5,722,412 [DKT 53] (“GE Br.”).

⁹ As noted in GE's opening brief, all of the asserted claims are invalid if claim 11 is found invalid for indefiniteness. GE Br. at 9-10.

B. The Specification of the ‘412 Patent Does Not Clarify the Ambiguity in Claim 11

SonoSite cites numerous portions of the ‘412 patent specification in its effort to resolve claim 11’s ambiguity. Unfortunately for SonoSite, the specification of the ‘412 patent confirms the hopeless ambiguity of the weight limitation rather than clarifying it.

In its search for clarifying language, SonoSite quotes the Abstract of the ‘412 patent:

A hand held ultrasonic instrument is provided in a portable unit. . . . In a preferred embodiment an array transducer, digital beamformer, digital filter, and image processor are packaged in one or more enclosures weighing ten pounds (4.5 kilograms) or less.

SonoSite Br. at 17. Remarkably, this is the only reference to a ten pound limitation anywhere in the ‘412 patent apart from the claims. And notably, the ten pound limitation in the Abstract is different in a number of respects from that in claim 11. For example, in claim 11 the weight cannot be ten pounds, but must be “less than ten pounds.” In addition, in the Abstract enclosures for *four* components are associated with the ten pound weight, while claim 11 associates enclosures for only *two* components with the less than ten pound limitation. *Compare* McAlhany Decl., Ex. 2, Abstract *with id.* at col. 23:14-16. The quoted language in the Abstract therefore introduces even more questions as to what must weigh ten pounds or less – is it all four components and their contents, some of the four components, the empty enclosures for the four components, etc.? This different but equally ambiguous language in the Abstract relating to a different system does nothing to clarify claim 11.

Unable to find any other references in the specification to a ten pound limitation, SonoSite directs attention to a preferred embodiment that weighs less than five pounds: “[t]his sophisticated ultrasound instrument can be manufactured as a hand held unit weighing less than five pounds.” SonoSite Br. at 18; *see also id.* at 9; McAlhany Decl., Ex. 2 at col. 1:31-61.

Again, this reference provides no guidance as to the construction of claim 11. Not only does it describe a preferred embodiment, the limitations of which may not be read into the claims (*Phillips*, 415 F.3d at 1323), but it unequivocally discloses a *five pound limitation* whereas claim 11 discloses a *ten pound limitation*. Compare McAlhany Decl., Ex. 2 at col. 1:59-61 with *id.* at col. 23:14-16. Furthermore, this reference clearly states that the “hand held unit” (*i.e.*, the whole system) must meet the weight limitation, in contrast to the disputed portion of claim 11 which references only certain components – enclosure(s), an array transducer and a beamformer. *Id.* at col. 1:60.

SonoSite also cites the embodiments shown in Figures 1 and 2b. Yet, both cited embodiments have only a single unit, while the plain language of claim 11 is not limited to a single unit. Moreover, there is no reference to weight in the description of Figure 1. While the Figure 2b system is said to weigh less than five pounds, including “all of the elements for a fully operational ultrasound system” and that “[a] major portion of this weight is attributable to the battery” (SonoSite Br. at 18; McAlhany Decl., Ex. 2 at col. 4:10-16), this offers no guidance as to the meaning of the ten pound, multi-unit limitations of claim 11.

SonoSite points to yet another preferred embodiment, which is a two unit system, the lower section of which contains the transducer array, electronics through to video signal output and user controls, and weighs approximately the same “as a conventional ultrasound scanhead.” SonoSite Br. at 18; McAlhany Decl., Ex. 2 at 4:17-26. This embodiment includes a second, heavier unit containing a display and the battery pack. *Id.* at col. 4:27-38. Even this embodiment, which may have more than one “enclosure,” does not aid in construing claim 11, as it makes no mention of a ten pound limitation. Moreover, the weight of this embodiment is

unknown as the '412 patent does not disclose “the weight of a conventional ultrasound scanhead” or of the battery or the display used in that embodiment. *See* Schafer Decl. II ¶ 25.

To support the SonoSite proposed construction of the weight limitation, SonoSite and Dr. Szabo contend that the '412 patent relates to an “extremely lightweight and highly portable” ultrasound system. *See, e.g.*, SonoSite Br. at 17 and Szabo Decl. ¶ 31. SonoSite and Dr. Szabo also contend that:

Someone of ordinary skill in the art reading claim 11 would not assume, after reading the specification, that the entire system could weigh as much as 19 or 29 pounds, depending on the number of units.

SonoSite Br. at 20; Szabo Decl. ¶ 33.

Yet, the '412 patent expressly contemplates an entire ultrasound system weighing well over ten pounds if a standard monitor is used. Schafer Decl. II ¶ 26; McAlhany Decl., Ex. 2, col. 1:54-55. Indeed the three-unit claim 11 system referred to by SonoSite (SonoSite Br. at 9-10) collectively weighs significantly more than ten pounds, if – as suggested in the '412 patent – a standard monitor is used. Schafer Decl. II ¶ 26. Moreover, the system described in the '412 patent must merely be “portable.” *See, e.g.*, McAlhany Decl., Ex. 2, col. 22:42-48. And SonoSite’s expert, Dr. Szabo, defines “portable” to include systems weighing as much as 50 pounds. Supp. McAlhany Decl., Ex. 9 ¶¶ 4, 6; *see also id.*, Ex. 5 at 13. Thus these contentions are not only without support, but they are contradicted by Dr. Szabo’s earlier admissions as to the proper meaning of “portable.” More significantly, they relate to the entire ultrasound system, not to the components that are the subject of the weight limitation in claim 11.

To summarize, the '412 patent specification makes only one reference to a ten pound limitation, but that reference is not instructive as to the meaning of claim 11 because it is itself ambiguous and it relates to a preferred embodiment that is not the same as the system in claim

11. There are other references to weight in the specification, but (1) they add to the ambiguity because in some instances they are associated with an entire ultrasound system, including the display, and in other instances are associated with only parts of an ultrasound system; (2) they are different weights than the ten pound limit of claim 11; (3) they relate to ultrasound components other than those in claim 11; and/or (4) they contain incomplete information about the weight of the system and/or its parts.

Thus, the specification, like the language of claim 11, offers no guidance to one skilled in the art as to which components must meet the ten pound limitation. *See* Schafer Decl. II ¶ 23.

C. SonoSite's Proposed Construction Is Itself Ambiguous and Its Arguments in Support Are Internally Inconsistent

SonoSite proposes that the weight limitation be construed as follows:

wherein the array transducer and the beamformer are located in one or more enclosures, the enclosure(s) with the claimed ultrasound components weighing altogether less than 10 pounds (4.5 kilograms).

As explained in SonoSite's brief, this proposed construction limits claim 11 to "ultrasound instruments that house the required electronics in one or more enclosures and that, altogether, weigh less than ten pounds." SonoSite Br. at 17. According to SonoSite, this construction requires that "one must weigh the unit(s) containing the electronics for the array transducer and the sampled data beamformer and determine whether the enclosure(s) plus electronics weigh less than ten pounds." *Id.*

Thus, SonoSite (in this portion of its argument) is advocating a construction in which only part of the system must be weighed (the transducer and beamformer and their enclosures), and not the entire system with its other electronics, battery pack and display. Indeed, SonoSite is advocating that less than the entire contents of the beamformer and transducer enclosures be weighed as its construction is limited to the weight of the enclosures "with the *claimed*

ultrasound components.” *Id.* at 23. Under this construction, to determine infringement, one would still have to resolve the ambiguity as to what constitutes the enclosure for the beamformer and for the transducer (the outermost or innermost enclosure) and would then have to weigh that enclosure after removing all electronics other than those for the transducer and the beamformer.

SonoSite has provided no support for choosing (1) to treat the enclosures cumulatively and (2) to include only the enclosures and the transducer and beamformer electronics in the ten pound limitation. Even if it could find that support, its interpretation remains ambiguous.

Moreover, SonoSite’s proposed construction is inconsistent with its own arguments that the specification – in at least some places – associates the weight with the complete system: “The focus [is] on the weight of an entire, functional ultrasound system.” *Id.* at 19. Unlike the three components of an ultrasound system referenced in claim 11 (some unspecified “enclosure(s),” a beamformer and an array transducer), a complete ultrasound system is comprised of many components, including but not limited to an array transducer, a coaxial cable to connect the transducer to the main unit, a beamformer, filters, image processing components, a display unit, a battery pack, and software, not to mention the housing for the ultrasound system that contains user controls, among other items. *See* McAlhany Decl., Ex. 2, Abstract, Figs. 2a & 22 and col. 1:35-38.

How can SonoSite contend that its interpretation (weighing only selected components) is correct, when its own arguments acknowledge that portions of the specification focus on the weight of the entire system?

D. SonoSite's Extrinsic Evidence Provides No Guidance as to Construction of Claim 11

SonoSite refers the Court to a dictionary definition for the term “enclosure.”¹⁰ SonoSite Br. at 19 n. 8. Again, the result is greater, not less, ambiguity. Even SonoSite recognizes that the term “enclosure” can have several meanings in common usage, including (1) the act or state of being enclosed, (2) something enclosed or (3) something that encloses. *Id.*; *see also id.* at 17 n. 7 (“an enclosure is not always defined as the surrounding plastic or other material but can include the items enclosed”).

SonoSite evidently chose a hybrid of these meanings, concluding that “enclosure” as used in claim 11 must encompass the enclosure itself and at least some contents of that enclosure. *Id.* at 17, 18-19. However, having chosen that definition, SonoSite remains equivocal as to whether it is the entire ultrasound system or only some enclosures and certain electronics that must weigh less than ten pounds. *Compare id.* at 18 (“The focus [is] on the weight of an entire, functional system”) *with id.* at 17 (“one must weigh the unit(s) containing the electronics for the array transducer and the sampled data beamformer and determine whether the enclosure(s) plus electronics weigh less than ten pounds”).

To bolster its construction of claim 11, SonoSite proffers a supposed description of the ‘412 patent in U.S. Patent No. 6,575,908 (“the ‘908 patent”). According to SonoSite, the ‘908 patent characterizes “the ‘412 patent as disclosing ‘a hand held ultrasonic instrument provided in a portable unit, weighing less than 3.5 lbs., including a battery, display screen, and system

¹⁰ SonoSite also offers a dictionary definition for the term “package,” which does not appear in claim 11. It appears in the Abstract and the specification, which as discussed *infra*, only add to the ambiguity of claim 11.

electronics within a common enclosure.’” *Id.* at 20-21 (citing Cox Decl.,¹¹ Ex. 6 at 3). Yet, there is no mention anywhere in the ‘412 patent of an ultrasound system that weighs less than 3.5 pounds. Therefore, even if extrinsic evidence, such as the ‘908 patent, could properly be considered in construing the ‘412 patent, the ‘908 patent’s patently incorrect description of the ‘412 patent is not instructive in construing claim 11 of the ‘412 patent.

SonoSite’s reliance on U.S. Patent No. 6,540,685 (“the ‘685 patent”), which describes the invention of the ‘412 patent as “a hand-held ultrasonic diagnostic instrument which can be comprised as a single-piece or as two separate sections ... [where] the single piece is less than five pounds” is equally misplaced. *Id.* at 21 (citing Cox Decl., Ex. 7 at col. 2:7-12). The ‘685 patent (even assuming this extrinsic evidence could properly be considered) describes only a single unit weighing less than five pounds. Accordingly, it is irrelevant to the meaning of the multi-component, ten pound limitation of claim 11.

E. Claim 11 Is Insolubly Ambiguous

Try as it might, SonoSite has not succeeded in resolving the ambiguities in claim 11. The claim language, written description, prosecution history, and extrinsic evidence all fail to give clear guidance as to how one of ordinary skill in the art should interpret the weight limitation in claim 11. Accordingly, that limitation is insolubly ambiguous.

This is not a “close question” of indefiniteness, as SonoSite would lead the Court to believe. There are many possible interpretations of claim 11, and even the one adopted by SonoSite remains ambiguous. The ‘412 patentees never made clear in claim 11 – or anywhere

¹¹ Declaration of Jeffrey Cox in Support of Defendant-Counter-Plaintiff SonoSite, Inc.’s Motion for Construction of Claims and Opening Brief in Support of Motion [DKT 57] (“Cox Decl.”).

else in the written description or prosecution history – what their invention is. They failed to give notice to the public what must weigh ten pounds, a critical boundary of the invention.

The Court is constrained to follow the basic rules of claim construction and cannot select one ambiguous construction over another merely to preserve validity.¹² See *Praxair, Inc. v. ATMI, Inc.*, Nos. 2007-1483, 2007-1509, 2008 U.S. App. LEXIS 20437, *30 (Fed. Cir. Sep. 29, 2008). Thus, if the specification and the prosecution history do not provide guidance on how to interpret claim language, a claim is indefinite. *Datamize, LLC v. Plumtree, Inc.*, 417 F.3d 1342, 1355-56 (Fed. Cir. 2005) (finding claim term indefinite where it failed to particularly point out the subject matter which the patentee regarded as his invention); *Union Pac. Resources Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 692 (Fed. Cir. 2001) (claim term was indefinite where specification suggested, but did not explain, the precise meaning of “comparing” and term could have other meanings to a skilled person).

As explained in GE’s opening brief, the Federal Circuit’s decision in *Honeywell Int’l, Inc. v. Int’l Trade Comm’n*, 341 F.3d 1332 (Fed. Cir. 2003), compels a finding that claim 11 is hopelessly ambiguous. See GE Br. at 22-23. In *Honeywell*, as in this case, the patent failed to plainly give notice which of several equally possible constructions of a claim term to adopt, and the Federal Circuit held the patent to be fatally indefinite.

Accordingly, GE requests that the Court reject SonoSite’s proposed construction and find that claim 11 is indefinite as a matter of law.

¹² The case cited by SonoSite regarding construing a claim to preserve its validity is inapposite. In *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. 2001), the issue was invalidity on the ground of “anticipation,” not indefiniteness, and the court found that it could not rewrite claims to avoid the impact of newly discovered art.

V. CONCLUSION

For the reasons stated above, GE respectfully requests that the Court adopt GE's claim constructions for "wherein a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer" in claim 11 and "wherein said beamformer is a digital beamformer which delays and combines digital echo signals" in claim 16, and reject SonoSite's contrary claim constructions. GE also respectfully requests that the Court find that the phrase "wherein said array transducer and said beamformer are located in one or more enclosures weighing less than ten pounds (4.5 kilograms)" in claim 11 is indefinite.

Respectfully submitted,

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CERTIFICATE OF SERVICE

A true and correct copy of the above and foregoing document was served on the following counsel as follows on November 7, 2008.

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